

## ASSIGNMENT 2

Textbook Assignment: "Automotive Electrical Circuits and Wiring" (continued) and "Hydraulic and Pneumatic Systems," chapters 2 and 3, pages 2-40 through 3-37.

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| <p>2-1. Of the following conditions on a distributor cap, which one will short coil voltage to ground?</p> <ol style="list-style-type: none"><li>1. Faulty distributor lead</li><li>2. Broken coil wire</li><li>3. Carbon trace</li><li>4. Broken rotor</li></ol>   | <p>2-4. When setting the dwell on a contact-point distributor, you should replace the distributor if the dwell varies more than what number of degree(s)?</p> <ol style="list-style-type: none"><li>1. 1</li><li>2. 2</li><li>3. 3</li><li>4. 4</li></ol>   |
| <p>2-2. When the points in a contact-point distributor become burnt or pitted, you should take what action?</p> <ol style="list-style-type: none"><li>1. Clean the points with a special file</li><li>2. Remove any burrs or pits with fine sandpaper</li><li>3. Clean the points with a rubbing block and realign</li><li>4. Discard them and install a new set</li></ol>                        | <p>2-5. When testing an electronic distributor, you conduct what test to check the resistance of the pickup coil?</p> <ol style="list-style-type: none"><li>1. Pickup coil ammeter test</li><li>2. Pickup coil ohmmeter test</li><li>3. Pickup coil voltage drop test</li><li>4. Pickup coil ECU test</li></ol> |
| <p>2-3. After installing contact points, you notice that the faces do not make full contact. What corrective action should you take?</p> <ol style="list-style-type: none"><li>1. File the faces straight across the edge that is riding high</li><li>2. Bend the movable breaker arm</li><li>3. Bend the stationary contact bracket</li><li>4. Remove the points and realign the faces</li></ol> | <p>2-6. What tool should you use to set the pickup coil air gap?</p> <ol style="list-style-type: none"><li>1. Multi-blade steel feeler gauge</li><li>2. Nonmagnetic feeler gauge</li><li>3. Dwell meter</li><li>4. 12-volt test light</li></ol>   |

- 2-7. To advance timing, you should turn the distributor housing in the same direction as the shaft rotation.
1. True
  2. False
- 2-8. Which of the following conditions results from ignition timing being too advanced?
1. Spark knock
  2. Poor fuel economy
  3. Sluggish acceleration
  4. Overheated exhaust manifold
- 2-9. Navy automotive and construction equipment lighting systems operate on what voltages?
1. 6 or 12 volts
  2. 12 or 18 volts
  3. 12 or 24 volts
  4. 18 or 24 volts
- 2-10. Of the following terms, which one refers to the luminous intensity of an incandescent lamp?
1. Candlepower
  2. Rated size
  3. Brightness
  4. Filaments
- 2-11. A halogen light increases light output by what percentage?
1. 10
  2. 15
  3. 20
  4. 25
- 2-12. How far in front of the vehicle should you locate the aiming screen when aligning headlights?
1. 10 feet
  2. 15 feet
  3. 20 feet
  4. 25 feet
- 2-13. When the headlights of a vehicle are centered 28 inches from the ground, how high should the reference line on the aiming screen be above ground level?
1. 24 inches
  2. 26 inches
  3. 28 inches
  4. 30 inches
- 2-14. When headlights are correctly aimed, the high intensity light beams drop what distance for every 25 feet away from the bulb?
1. 5 inches
  2. 2 inches
  3. 3 inches
  4. 4 inches
- 2-15. The aiming of truck headlights differs from the aiming of automobile headlights to compensate for which of the following conditions?
1. The effect of the variations in loads
  2. The height of the vehicle
  3. The width of the vehicle
  4. The size of tires used

- 2-16. On tactical vehicles equipped with blackout lights, the driving light is designed to provide light directly in front of the vehicle out to a distance of what number of feet?
1. 10
  2. 15
  3. 20
  4. 25
- 2-17. The function of what component is to turn off the turn signal switch?
1. Composite cam
  2. Limiting cam
  3. Canceling cam
  4. Cutoff cam
- 2-18. A burned-out fuse has a discolored sight glass. This condition indicates the existence of what problem?
1. The rating of the fuse is too low
  2. An overloaded circuit
  3. An open circuit
  4. A short in the wiring
- 2-19. You are operating a vehicle with a 12-volt electrical system. The voltmeter in the vehicle should indicate a reading that falls within what voltage range?
1. 11.5 to 12.2
  2. 13.2 to 14.5
  3. 15.5 to 16.2
  4. 17.5 to 18.3
- 2-20. What component supplies power for the small electric motor that rotates the input shaft of an electric speedometer?
1. Magnet generator
  2. Thermistor generator
  3. Distribution generator
  4. Resolution generator
- 2-21. An electronic tachometer on a diesel engine derives its input signal from
1. a pulse signal from the distributor as it switches the coil on and off
  2. a signal from a magnetic pickup coil that has its field interrupted by a rotating pole piece
  3. alternating current generated by the stator terminal of the alternator
  4. a power signal that is generated through a magnetic pickup at the camshaft
- 2-22. What component in the windshield wiper switch provides the operator a means of delaying windshield wiper action?
1. Thermistor
  2. Variable speed resistor
  3. Rheostat
  4. Recultor

- 2-23. On which of the following types of equipment will you find numbered tags that identify the wiring circuits?
1. Sedans
  2. M-series vehicles
  3. Track-mounted equipment
  4. Wheel-mounted construction equipment
- 2-24. All construction equipment regardless of manufacturer use the same color code for each component.
1. True
  2. False
- 2-25. Wires passing through holes in a metal member of the body or frame should be protected by which of the following types of materials?
1. Plastic clamps
  2. Flexible tubing
  3. Rubber grommets
  4. Electrical tape
- 2-26. A properly constructed hydraulic system possesses which of the following characteristics?
1. The use of complicated gears, cams, and levers is required
  2. Provides variable motion only in a straight-line transmission of power
  3. Low temperature changes
  4. Motion can be transmitted without the slack inherent in the use of solid machine parts
- 2-27. When 50 pounds of force is applied to piston 1 (as shown in textbook figure 3-4), how many pounds of force is applied to piston 2?
1. 25
  2. 50
  3. 75
  4. 100
- 2-28. Referring to textbook figure 3-5, when piston 1 is 4 square inches and is pushed down 2 inches and piston 2 is 16 square inches, how far will piston 2 move?
1. 1/2 inch
  2. 1/8 inch
  3. 1/4 inch
  4. 1/16 inch
- 2-29. What are the three most common types of hydraulic fluids?
1. Petroleum-based, synthetic fire-resistant, petroleum-based fire-resistant
  2. Water-based, phosphate ester fire resistant, water-based fire-resistant
  3. Silicon-based, petroleum-based fire-resistant, water-based fire-resistant
  4. Petroleum-based, synthetic fire-resistant, water-based fire-resistant

2-30. A properly designed and constructed hydraulic reservoir should be capable of

1. separating air from the oil
2. causing a vortex
3. dissipating air bubbles
4. maintaining line pressure

2-31. Why is the hydraulic reservoir vented?

1. To prevent the loss of fluid
2. To allow the reservoir to breathe
3. To separate air from the fluid
4. To dissipate heat from the fluid

2-32. In a standard hydraulic system, the strainer is at what location?

1. On the discharge side of the pump
2. Between the filter and the pump
3. In the pressure relief line
4. On the pump suction lines

2-33. The operating pressure within a hydraulic system is created by the

1. pumping capacity of the pump
2. opening and closing of the relief valve
3. resistance encountered by the fluid
4. the displacement of the pump

2-34. The amount of fluid that a hydraulic pump can deliver per cycle is known by what term?

1. Pump displacement
2. Discharge displacement
3. Volumetric output
4. Variable output

2-35. Which of the following types of hydraulic pumps is designed to operate at moderate speeds which reduces erosion and excessive wear of the pump?

1. Rotary
2. Centrifugal
3. Diaphragm
4. Reciprocating

2-36. Which of the following actions is NOT a function performed by the valves in a hydraulic system?

1. Prevents leakage between precision machined surfaces
2. Controls pressure in the system
3. Directs the flow of fluid
4. Regulates the flow of fluid

2-37. In a hydraulic system, what valve is designed to regulate the flow of the hydraulic fluid?

1. Directional control
2. Functional control
3. Flow control
4. Pressure control

2-38. In a hydraulic system, the directional control valve serves which of the following functions?

1. Keeps the hydraulic pump operating at a constant speed
2. Regulates the pressure sent to the cylinder during operation
3. Sends fluid back to the reservoir when pressure becomes too great
4. Regulates the speed and operation of hydraulic cylinders

- 2-39. Which of the following is NOT a type of valving element used in the construction of a directional control valve?
1. Rotary spool
  2. Sliding spool
  3. Vented
  4. Poppet
- 2-40. The double-acting cylinder shown in textbook figure 3-31 will have more force applied to the cylinder as it is retracted.
1. True
  2. False
- 2-41. Why are accumulators used in some hydraulic systems?
1. To increase fluid capacity
  2. To absorb and stabilize shock loads
  3. To stabilize the amount of fluid pumped
  4. To store fluid for emergency fluid loss
- 2-42. What are the three major types of hydraulic accumulators?
1. Weight-loaded, bladder, and spring-loaded
  2. Bladder, floating piston, and diaphragm
  3. Spring-loaded, diaphragm, and pneumatic
  4. Pneumatic, weight-loaded, and spring-loaded
- 2-43. A fixed displacement hydraulic motor provides which of the following conditions?
1. Constant torque and variable speed
  2. Variable torque and constant speed
  3. Variable torque and variable speed
  4. Constant torque and variable speed
- 2-44. What type of hydraulic motor is most often used in hydraulic systems?
1. Constant-displacement
  2. Variable-displacement
  3. Fixed-displacement
  4. Hydrostatic-displacement
- 2-45. In a hydraulic system, which of the following is NOT an advantage of tubing over pipe?
1. Handles large volumes of fluid under high pressure
  2. Requires fewer fittings and has a better appearance
  3. Easier to bend, cut, and fit
  4. Easier to maintain
- 2-46. When piping is used in a hydraulic system, the pipe should be made of which of the following materials?
1. Electric welded mild steel
  2. Galvanized mild steel
  3. Seamless rolled mild steel
  4. Seamless cold-drawn mild steel

- 2-47. The flexible hose you are using has a designation of – 4. What is the inside diameter of this hose?
1. 1/16 inch
  2. 1/8 inch
  3. 1/4 inch
  4. 1/2 inch
- 2-48. Why is the inner tube (layer) of a flexible hydraulic hose made of synthetic material?
1. To reduce resistance
  2. To prevent deterioration
  3. To protect the strength members
  4. To prevent the hose from twisting
- 2-49. When placing support clamps on a length of flexible hose, you place the clamps at intervals of what maximum distance?
1. 12 inches
  2. 18 inches
  3. 24 inches
  4. 30 inches
- 2-50. Which of the following conditions is a result of mismatched hoses and fittings?
1. Pressure drops
  2. Pressure increases
  3. Cooling factor increases
  4. Twisted hose
- 2-51. Which of the following is NOT a type of fluid power seal?
1. Quad rings
  2. T seals
  3. X rings
  4. O rings
- 2-52. When more than one U cup is installed, they are installed in what manner?
1. Back to back
  2. Head to head
  3. Toe to toe
  4. Face to face
- 2-53. A hydraulic system on a piece of CESE should be flushed according to the manufacturer's recommendation.
1. True
  2. False
- 2-54. The branch of science that pertains to gaseous pressure and flow is known by what term?
1. Hydraulics
  2. Hydropneumatics
  3. Pneumatics
  4. Pneumatology
- 2-55. What law states that a volume of a gas is proportional to its absolute temperature if pressure remains constant?
1. Charles's Law
  2. Boyle's Law
  3. Pascal's Law
  4. Murphy's Law

- 2-56. Which of the following is NOT a desired quality of a gas used in a pneumatic system?
1. Free from acids
  2. Chemically stable
  3. Nonpoisonous
  4. Excellent lubricating power
- 2-57. Compressed air systems are categorized by operating pressure. A medium-pressure air system is rated at what pressure?
1. 180 to 1,500 psi
  2. 151 to 1,000 psi
  3. 175 to 1,200 psi
  4. 200 to 2,000 psi
- 2-58. In the rotary compressor, the sliding vanes are held against the pump casing by
1. spring tension
  2. oil pressure
  3. air pressure
  4. centrifugal force
- 2-59. Before the compressed air leaves the service valves of a rotary air compressor, the oil in the air is removed by what component?
1. The in-line oiler
  2. The receiver separator
  3. The oil cup
  4. The oil separator
- 2-60. What type of air compressor is equipped with an intercooler?
1. Multistage reciprocating
  2. Multistage rotary
  3. Multistage screw
  4. Single-stage screw
- 2-61. Why are aftercoolers used on some reciprocating air compressors?
1. To remove moisture from the air
  2. To eliminate surges in air delivery
  3. To prevent overheating of pneumatic tools
  4. To reduce pressure in the distribution system
- 2-62. On a rotary air compressor, engine speed is regulated to correspond with which of the following factors?
1. Capacity of the compressor
  2. Volume of air to supply the demand
  3. Discharge pressure of the compressor
  4. Temperature of air leaving the compressor
- 2-63. When using compressed air to clean the primary element of an air cleaner, you should not allow the air pressure to exceed
1. 10 psi
  2. 20 psi
  3. 30 psi
  4. 40 psi

2-64. When should you replace the air cleaner elements of an air compressor?

1. Each time the compressor oil is changed
2. After every 500 hours of service
3. When inspections shows an accumulation of greasy dirt
4. When the red band is visible in the air cleaner service indicator

2-65. Under normal operating conditions, compressor oil should be changed after what number of operating hours?

1. 250
2. 300
3. 425
4. 500